

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ryan Harris on April 8, 2010.

2. The application has been amended as follows:

- a. In claim 56, line 4, insert the phrase "as measured in an aqueous suspension" between the term "millivolts" and "said silica."

Therefore, claim 56 will recite:

"A breathable film comprising a thermoplastic polymer and a filler blended with silica nanoparticles, wherein said silica nanoparticles have a diameter of about 500 nanometers or less and a negative first Zeta Potential from about -1 to about -50 millivolts as measured in an aqueous suspension, said silica nanoparticles being modified with a metal ion to form modified silica nanoparticles, said metal ion selected from the group consisting of copper ion, silver ion, gold ion, iron ion, and combinations thereof, wherein said modified silica nanoparticles comprise a second Zeta Potential being at least about 5.0 millivolts higher than said negative first Zeta Potential."

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance: Applicant agreed to amend claim 56 to include the limitation of "as measured in an aqueous suspension" with respect to the negative first zeta potential of the silica nanoparticles. The closest prior art references, Morman et al. (US 2002/0004350 A1) and Rohrbaugh et al. (US 2002/0151634 A1), do not teach or suggest silica nanoparticles with a negative first zeta potential from about -1 to about -50 millivolts which, upon modification with a metal ion (a copper ion), have a second zeta potential that is at least 5.0 millivolts higher than the negative first zeta potential. Although the zeta potential of a particle or a nanoparticle is a physical property of the nanoparticle in suspension, the ***change*** in zeta potential of silica nanoparticles in an aqueous suspension ***as a measure*** of the amount of metal ions that are absorbed on the surface of the nanoparticle is not disclosed by the prior art. A further prior art search did not disclose a reference that teaches the change in zeta potential of silica nanoparticles in an aqueous suspension as a measure of the amount of metal ions that are absorbed on the surface of the nanoparticle.

Furthermore, the prior art references do not disclose a film comprising a filler that is ***blended*** with silica nanoparticles. Rohrbaugh teaches ***coating*** compositions comprising a nanoparticle system (Abstract).

Therefore, the claimed invention is novel and patentably distinct over the prior art of record.

Terminal Disclaimers

4. Applicant filed terminal disclaimers over Application No. 10/686,933 and over US Patent Numbers 7,141,518 and 7,578,997.

Rejoinder of All Previously Withdrawn Claims

5. Claim(s) 56-63, 67-76 and 81-88 is/are allowable. Claim(s) 77, 79 and 80, previously withdrawn from consideration as a result of a restriction requirement, require all the limitations of an allowable claim. Pursuant to the procedures set forth in MPEP § 821.04(a), the restriction requirement between the groups and species, as set forth in the Office action mailed on 12/05/2006, is hereby withdrawn and claim(s) 77, 79 and 89 are hereby rejoined and fully examined for patentability under 37 CFR 1.104. In view of the withdrawal of the restriction requirement, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Comments

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Claims 56-63, 67-77, and 79-88 are allowed.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Wax, can be reached at 571-272-0623. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aradhana Sasan/
Examiner, Art Unit 1615

/Robert A. Wax/
Supervisory Patent Examiner, Art Unit 1615